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TUMOR TISSUE MICROARRAYS FOR RAPID MOLECULAR PROFILING

ABSTRACT OF THE DISCLOSURE

5 An array-based technology facilitates rapid correlated gene copy number and
expression profiling of very large numbers of human tumors. Hundreds of cylindrical tissue biopsies
(diameter 0.6 mm) from morphologically representative regions of individual tumors can be arrayed
in a single paraffin block. Consecutive sections from such arrays provide targets for parallel in situ
visualization and quantitation of DNA, RNA or protein targets. For example, amplifications of six
10 loci (mybL2, erbB2, Cyclin-D1, myc, 17q23 and 20q13) were rapidly determined by fluorescence in
situ hybridization from 372 ethanol-fixed breast cancers. Stratification of tumors by estrogen
receptor and p53 expression data revealed distinct patterns of gene amplification in the various
subgroups of breast cancer that may have prognostic utility. The tissue array technology is useful in
the rapid molecular profiling of hundreds of normal and pathological tissue specimens or cultured
15 cells.

